

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF CLAIMS:

Claims 1-14 : (Canceled)

Claim 15 : (New) A transmitter for an optical RZ-DPSK communication signal, comprising:

- a) a source for an optical carrier;
- b) an electro-optical modulator having at least one element with an optical path length adapted to be modified by an electrical driver signal for intensity modulating the optical carrier based on the driver signal; and
- c) a driver circuit for generating the driver signal from an electrical communication signal, the driver signal being an impulse-type signal having two types of impulses spaced in time by a neutral signal state, wherein during the neutral signal state of the driver signal, a transmission of the modulator becomes zero, and the two types of impulses cause the transmission of the modulator to be different from zero and a phase shift which is specific for each type of the impulses.

Claim 16 : (New) The transmitter of claim 15, in that the specific phase shifts differ by π .

Claim 17 : (New) The transmitter of claim 15, in that the modulator is an interferometer having arms, in which the optical path length of at least one of the arms is controllable by the driver signal, and in which a neutral signal level corresponds to a path length difference between the arms of half of a carrier wavelength of the optical carrier.

Claim 18 : (New) The transmitter according to claim 17, in that two conductors are used for transmitting the driver signal, wherein the impulses of a first type are transmitted on a first of the conductors, and wherein the impulses of a second type are transmitted on a second of the conductors.

Claim 19 : (New) The transmitter of claim 18, in that the two arms each comprise the element having a controllable optical path length, the first of which is connected to the first of the conductors and the other of which is connected to the second of the conductors.

Claim 20 : (New) The transmitter according to claim 15, in that the driver circuit comprises a difference circuit for forming a pre-coded signal representative of a difference between subsequent bits of the electrical communication signal, and the driver signal is derived from the pre-coded signal.

Claim 21 : (New) The transmitter of claim 20, in that the difference circuit comprises an XOR-gate and a flip-flop.

Claim 22 : (New) The transmitter according to claim 20, in that the driver circuit comprises four pairs of switches, each having first and second main ports and a control port, wherein in each pair the first main ports of the switches are connected to each other and the control ports of the switches are supplied with mutually inverse input signals.

Claim 23 : (New) The transmitter of claim 22, in that, in a first and second pair, the second main ports are connected to two output ports of the driver circuit, and, in a third and fourth pair, one of the second main ports is connected with one of the two output ports and the other second main port is connected to the first main ports of the first and second pairs, respectively.

Claim 24 : (New) The transmitter of claim 23, in that the input signal of the first and second switch pairs is a clock signal, and in that the input signal of the third and fourth switch pairs is the pre-coded signal.

Claim 25 : (New) The transmitter of claim 22, in that in a first, second and third one of the pairs, the second main port is connected to two output ports of the driver circuit, and in a fourth one of the pairs, the common first main port is connected to a supply voltage, and each of the second main ports is connected to one of the common first main ports of the first and second pairs, respectively.

Claim 26 : (New) The transmitter of claim 25, in that the input signal of the first, second and third switch pairs is the pre-coded signal, and in that the input signal of the fourth switch pair is a clock signal.

Claim 27 : (New) The transmitter according to claim 15, and a control means for varying a ratio between a duration of the impulses and a duration of the neutral signal state.

Claim 28 : (New) The transmitter of claim 27, in that the control means is a mono-flop located in a clock line of the driver circuit.